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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Michael D. Peterson

Serial No. : 09/658,374

Examiner: Robin Annette Hylton

Filed : September 8, 2000

Group Art Unit: 3727

Title : CORROSION RESISTANT VENTS WITH INTEGRAL FILTER

REPLY BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Examiner's Answer dated August 13, 2004.

Referring specifically to the "Response to Argument" occurring on page 4 of the Examiner's Answer, it is respectfully submitted that support for the statement "direct contact" occurs in the written specification as well as in the drawings as filed. The Board's attention is directed to the Abstract of the Disclosure which includes the following recitation:

The vent inserts do not utilize adhesive to retain filter elements therein but rather utilize a housing having a filter element support with a knife edge to form a seal and a press fitted lid. (Emphasis supplied)

The body of Appellant's specification at page 4, lines 21-16 recites:

"The shoulder 28 has a sharp annular edge defined by a slightly conical portion 32 of the shoulder which bites into the bottom surface 29 of the filter element to provide a knife edge seal so that the first end of the housing is sealed with respect to the filter element 16."

I hereby certify that this correspondence is being deposited with the U.S. Postal Services as First Class Mail in an envelope addressed to Assistant Commissioner for Patents

P.O. Box 1450
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On: October 13, 2004

Name: Janet M. Jacobs

SIGNATURE Janet M. Jacobs

DATE 10/13/04

§Appl. No. 09/658,374
Amdt. dated October 13, 2004
Reply to Examiner's Answer: August 13, 2004

Thus, there is written description as well as the showings of Figs. 3 and 8 supporting the following claim limitations of claim 1:

... a seal between the filter media and the housing, the seal consisting of direct engagement between the nickel, chromium molybdenum alloy of the housing and the carbon-to-carbon filter media.

The claim is directed to the seal and the seal in both the Abstract of the Disclosure and the Specification recite no other element or structure, such as an adhesive, while Figs. 3 and 8 of the drawings show no structure other than direct contact. Moreover, the Abstract of the Disclosure specifically excludes adhesive to retain the filter elements therein, but rather recites a housing having a filter element support and a knife edge to form a seal and a press fitted lid. Clearly there is support for direct engagement when the drawings and specification are considered in conjunction.

In the response to Argument the Examiner refers specifically to Comparative Example 2 on page 8, lines 15-23, which reads as follows:

A mechanical press fit seal with a carbon-to-carbon composite filter element disposed in a type 316 stainless steel housing passed compatibility tests with nitric acid, carbon tetrachloride, 1, 1, 1 TCE with no change in filtration performance. Exposure to nitric acid resulted in a test chamber being filled with NOX fumes with the filter unchanged.

This vent insert failed to HCl compatibility test because the filter media became plugged. Corrosion continued to increase and thicken throughout the exposure to HCl with the corrosion being moist with condensed acid fumes.

When you compare Example 2 with the comparative example on page 8, lines 10-14 (comparative Example 1) which does use a sealant to retain a carbon composite filter element in a stainless steel housing, it is seen that Comparative Example 1 fails in carbon tetrachloride and 1, 1 TCE, which Comparative Example 2 passed without the Dvcon epoxy sealant. Accordingly, the mechanical press fit seal of Comparative Example 2 is an improvement over Comparative Example 1.

In Comparative Example 3, the filter element was exposed to an HCl environment and showed no clogging, which indicated that the proximity of the stainless steel housing and lid caused clogging of the filter media.

§Appl. No. 09/658,374
Amdt. dated October 13, 2004
Reply to Examiner's Answer: August 13, 2004

Appellant achieves a two-hundred year time-to-failure by combining a HASTELLOY® (nickel, chromium, molybdenum alloy) housing with a carbon-to-carbon filter media 16 sealed thereto in direct contact. As is set forth in the Abstract there is no adhesive is used to retain the filter element, the seal being knife edge seal which bites into the carbon-to-carbon filter media. Progression to the invention is clear from the three comparative examples of: 1) an adhesive seal which is unsatisfactory, to 2) a press fit (seal) which is unsatisfactory with a 316 stainless steel housing, to 3) an arrangement using a HASTELLOY® housing in combination with a knife edge seal that is satisfactory in a practical sealing vent application. The Abstract says no adhesive is used and the drawings show no adhesive. The comparative examples are clearly further evidence that there is a disclosure of direct contact.

It is respectfully submitted that the Examiner's Answer contradicts a clear disclosure and attempts to introduce an element of doubt with respect to "direct contact" by making the unsupported assumption that "it should be kept in mind that patent drawings rarely illustrate the ease of layers between two structural elements." It is respectfully submitted that this rejection under 35 U.S.C. §112 requires the Examiner to read information into the drawings which is simply not there and which contradicts clear statements in the specification. For these additional reasons, it is respectfully requested that the Final Rejection under 35 U.S.C. §112 be reversed.

The Rejection of Claims 1, 2, 7 and 18-20 under 35 U.S.C. §102(a) Relying on Brassell '328 as a Primary Reference:

With respect to the primary reference, Brassell '328, it is respectfully submitted that Brassell identifies sealing as an issue and then states that a particularly preferred sealant is RTV high temperature silicone. There is no suggestion whatsoever in Brassell '328 that no sealant be used or that a direct contact seal be used, as is claimed by Appellant and as supported by Appellant's disclosure. Clearly, the broad recitation that a filter must be properly sealed to the container and then

§Appl. No. 09/658,374
Amdt. dated October 13, 2004
Reply to Examiner's Answer: August 13, 2004

referring to a particularly preferred sealant is not a teaching to one skilled in the art that no adhesive sealant should be used. That no additional sealant should be used can only be gleaned from Applicant's disclosure.

With respect to the fourth paragraph of the Examiner's Response to Argument, Applicant's comparative examples clearly establish that there are unexpected results from the use of nickel-molybdenum-chromium alloy. The typical approach is to use 3/16 stainless steel with an epoxy sealant, but after just 24 hours, the epoxy becomes gooey. In the next example, the mechanical press fit is used of the carbon-to-carbon filter element in a type 3/16 stainless steel housing, but this vent fails that HCL compatibility test because the filter media becomes plugged and corrosion continues after the test. In the third example, the filter element is tested by itself without a stainless steel housing and no plugging occurs.

The fourth test is of Appellant's claim, an enclosure vent wherein a housing of HASTELLOY C-22® alloy is used (a nickel-molybdenum-nickel molybdenum chromium alloy), resulting in a vent which has a life of at least two hundred years. Clearly, no adhesive is used in the seal as, set forth in the Specification, Abstract and Drawings as originally filed. A knife edge seal is disclosed which clearly to one skilled in the art is a direct contact seal.

Appellants respectfully submit that the remaining issues are addressed in Appellant's Brief as filed and respectfully disagree with the Examiners assertions with respect to these issues relying on the brief as filed.

The Board's attention is specifically directed to independent claim 19 which recites the following concept in line 13-16:

... the unitary filter media being sealed with the housing by direct engagement to provide a carbon-to-carbon/nickel chromium molybdenum alloy knife edge seal between the filter media and the housing.

Independent claim 19 recites a knife edge seal between the filter media and the housing and all that is shown is direct engagement with an annular edge (30). As previously discussed, there is support in

§Appl. No. 09/658,374
Amdt. dated October 13, 2004
Reply to Examiner's Answer: August 13, 2004

the application, as filed, for this limitation.

Appellants acknowledge the withdrawal of rejections under 35 U.S.C. §103 based on Wickland '304 in view of Kalota et al. and Finkelstein et al or McKedy and Wickland et al '50505.

For the above-identified reasons it is respectfully submitted that the Examiner's Answer does not support the contention that the rejections should be sustained, and it is respectfully requested that the Final Rejection should be withdrawn.

In view of the above remarks, favorable reconsideration is courteously requested. If there are any remaining issues which could be expedited by a telephone conference, the Examiner is courteously invited to telephone counsel at the number indicated below.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,



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